In The Specification:

Replace the following paragraphs as follows:

[0018] In this example two images *A1* and *A2* of the same object or scene are to be imaged matched A2 to A1. For every pixel of *A1* and *A2*, the following relation holds: ~~A1 = A2 * (A1/A2). By differentiation of the logarithm of above equation, the contrast function *C(.)* at a given location is denoted by : C(A1) = C(A2) + C(A1/A2). As will be further described below, the image division A1/A2 may optionally be regularized relative to the image to be matched A1 in step 52 when the image quality is not good, e.g., noisy. Various types if regularization may be performed. Regularization will be further described below.~~

$$A1 = A2 * (A1/A2).$$

~~[0018] In order to satisfy *C(A1) = C(A2)* in the above equation, *C(A1/A2) = 0*. A well known way to decrease the contrast is to low pass filter the ratio *A1/A2* as shown in step 54. Therefore in step 56, contrast matching output equation for the two images A1 and A2 is thus:~~ ~~$A1_{M2} = A2 * LPF(A1/A2)$, where $A1_{M2}$ is the contrast matched version of *A2* with respect to *A1* and *LPF(.)* is a low pass filter function. The low pass filter function is further described below.~~

[0019] By differentiation of the logarithm of above equation, the contrast function *C(.)* at a given location is denoted by :

$$C(A1) = C(A2) + C(A1/A2).$$

~~[0020] For multiple (N) images, Let *A1, A2, ., AK., AN* be the *N* images under consideration (*K < N*) and each of these images are to be matched to the same reference image A1. By extending the above logic to any of N images, say image K, the general relationship exists,~~ ~~$A1_{MK} = AK * LPF(A1/AK)$ where $A1_{MK}$ is the contrast matched version of *AK* with respect to *A1*. Thus, a generalized contrast matching has been achieved since,~~ ~~$C(A1) = C(A1_{M2}) = \ldots = C(A1_{MK}) = \ldots = C(A1_{MN})$.~~

[0020] As will be further described below, the image division A1/A2 may optionally be regularized relative to the image to be matched A1 in step 52 when the image quality is not

good, e.g., noisy. Various types if regularization may be performed. Regularization will be further described below.

[0021] In order to satisfy $C(A1) = C(A2)$ in the above equation, $C(A1/A2) = 0$. A well known way to decrease the contrast is to low pass filter the ratio $A1/A2$ as shown in step 54. Therefore in step 56, contrast matching output equation for the two images A1 and A2 is thus:

$$A1_{M2} = A2 * LPF(A1/A2),$$

where $A1_{M2}$ is the contrast matched version of $A2$ with respect to $A1$ and $LPF(.)$ is a low pass filter function. The low pass filter function is further described below.

~~[0022] To summarize, an image A2 has to be matched to another image A1 of the same scene/objects to obtain the matched image $A1_{M2}$ using the relation: $A1_{M2} = A2 * LPF(A1/A2)$ where LPF is a low-pass filter function. Preferably the low pass filter function is a boxcar filter and the parameters of the filter are application specific. For general applications, the filter kernel length is one-tenth the length of the image (assuming a square image and square kernel). Furthermore, in practice, the above equation may need to be modified in order to avoid noise amplification during image division. Regularization may be performed in a number of methods to prevent noise amplification during image division. The image division ratio has a numerator A1 and a denominator A2. One method to regularize image division is to add a small constant to the denominator, i.e., denominator becomes (A2 + □, where as an example, □ = 1.0. Thus the equation becomes $A1_{M2} = A2 * LPF(A1/(A2+\epsilon))$.~~

[0022] For multiple (N) images, Let $A1, A2, .., AK.., AN$ be the N images under consideration ($K < N$) and each of these images are to be matched to the same reference image A1. By extending the above logic to any of N images, say image K, the general relationship exists,

$$A1_{MK} = AK * LPF(A1/AK)$$

where $A1_{MK}$ is the contrast matched version of AK with respect to $A1$. Thus, a generalized contrast matching has been achieved since, $C(A1) = C(A1_{M2}) = \ldots = C(A1_{MK}) = \ldots = C(A1_{MN})$.

~~[0021]~~ [0023] The choice of parameters in the low pass filter function essentially determines the scale of contrast matching obtained. Various types of low pass filters may be used. For example, a boxcar filter with a single parameter may be used. A boxcar filter smoothes an image by the average of a given neighborhood of pixels. It is separable and efficient methods exist for its computation. Each point in the image requires just four arithmetic operations, irrespective of the kernel size. The length of the separable kernel is variable and depends on the scale of contrast matching desired. For example, if the kernel size is about one tenth of the image size, assuming a square image and a square kernel, excellent global contrast matching of images is obtained. On the other hand, using too small a kernel size produces undesirable blobby patterns in the matched images. Therefore, a reasonably large kernel should be used to avoid any perceptible artifacts using this method.

~~[0024] Another method for regularization is to replace the ratio (A1/A2) by a regularized ratio given by (A1 * A2/(A2 * A2 + □)), where as an example, □ = 1.0. Thus the equation becomes $A1_{M2}$ = A2 * LPF(A1 * A2/(A2 * A2 + δ)).~~

[0024] To summarize, an image *A2* has to be matched to another image *A1* of the same scene/objects to obtain the matched image $A1_{M2}$ using the relation:

$$A1_{M2} = A2 * LPF(A1/A2)$$

where LPF is a low pass filter function. Preferably the low pass filter function is a boxcar filter and the parameters of the filter are application specific. For general applications, the filter kernel length is one-tenth the length of the image (assuming a square image and square kernel). Furthermore, in practice, the above equation may need to be modified in order to avoid noise amplification during image division. Regularization may be performed in a number of methods to prevent noise amplification during image division. The image division ratio has a numerator A1 and a denominator A2. One method to regularize image division is to add a small constant to the denominator, i.e., denominator becomes (A2 + ε, where as an example, ε = 1.0. Thus the equation becomes

$$A1_{M2} = A2 * LPF(A1/(A2+\varepsilon)).$$

~~[0023]~~ [0025] Of course, if no regularization is to be performed, ε would be 0.

[0026] Another method for regularization is to replace the ratio (A1/A2) by a regularized ratio given by (A1 * A2/(A2 * A2 + δ)), where as an example, δ = 1.0. Thus the equation becomes

$$A1_{M2} = A2 * LPF(A1 * A2/(A2 * A2 + \delta)).$$

~~[0025]~~ [0027] When a number of images *A2, ..., AK,..., AN* have to be matched to a single image *A1*, the above process may be performed in a pair wise fashion to obtain $A1_{M2},...,A1_{MK}...,A1_{MN}$.

~~[0026]~~ [0028] While the invention has been described in connection with one or more embodiments, it should be understood that the invention is not limited to those embodiments. On the contrary, the invention is intended to cover all alternatives, modifications, and equivalents, as may be included within the spirit and scope of the appended claims.